

THE CLAIMS

What is claimed is:

- 5 1. A stop device for use with a footwear lacing system for preventing opposing closure edges of a footwear article from advancing towards each other comprising:
a stop guide configured for fastening to a portion of the footwear article; and
a stop element having a stop head and a releasable affixing member, wherein the stop head is configured to be manipulated by a user to releasably secure the affixing member to a
10 selected position across the length of the stop guide and wherein the stop head is operable to contact a first closure edge of the footwear article.
2. The apparatus of claim 1 wherein a first distal end of the stop guide is configured for attachment to a tongue of the footwear article.
- 15 3. The apparatus of claim 2 wherein a second distal end of the stop guide is free-floating.
4. The apparatus of claim 3 further comprising a cross guide member configured for attachment to the tongue, the cross guide member comprising a base section with a sleeve to
20 accommodate the second distal end of the stop guide, and a guide portion including at least one channel for guiding the lace.
5. The apparatus of claim 1 wherein the stop guide includes a plurality of openings, and the affixing member includes at least one stop pin for releaseably mating with a selected opening.

6. The apparatus of claim 5 wherein the affixing member includes at least two stop pins.

7. The apparatus of claim 1 wherein the stop element further comprises a stop tab.

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8. The apparatus of claim 1 further comprising a second stop device comprising a second stop guide and a second stop element having a second stop head and a second releasable affixing member, wherein the second stop device is fastened to a portion of the footwear article that is adjacent to and opposite a first stop device such that the second stop head is operable to contact a
10 second closure edge of the footwear article.

9. The apparatus of claim 1 wherein the stop head has a front surface that is shaped to complement the shape of a cable guide member, wherein the cable guide member is associated with the closure edge of the footwear article.

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10. The apparatus of claim 1 wherein the stop guide includes a plurality of teeth, and the affixing member includes at least one tooth.

11. The apparatus of claim 10 which further comprises a second stop element having a
20 second affixing member that includes at least one tooth for releasably meshing with the teeth of the stop guide, and wherein a first and the second stop elements include first and second stop heads configured to contact the first closure edge and an opposing second closure edge of the footwear article.

12. The stop device of claim 11 wherein the first and second stop heads are stop hooks that are shaped to securely contact the first and second closure edges of the footwear article.

5 13. A stop device for use with a footwear lacing system for preventing opposing closure edges of a footwear article from advancing towards each other comprising:

a stop head having a first surface operable to contact a first closure edge of the footwear article;

a tab connected to the stop head, wherein the tab includes at least one adjustment hole for
10 attachment to a tongue area of the footwear article; and

a fastener for releasably securing the tab in a selected position on the tongue area.

14. The apparatus of claim 13 further comprising a second stop device comprising a second stop head having a surface operable to contact a second closure edge of the footwear article, a

15 second tab connected to the second stop head, wherein the second tab includes at least one adjustment hole for attachment to a tongue area of the footwear article, and a second fastener for releasably securing the second tab in a selected position that is adjacent to and opposite a first stop device such that the second stop head is operable to contact the second closure edge of the footwear article

20 15. The apparatus of claim 13 wherein the front surface of the stop head is shaped to complement the shape of a cable guide member that is associated with the closure edge of the footwear article.

16. A stop device for use with a footwear lacing system for preventing opposing closure edges of a footwear article from advancing towards each other comprising:

a stop head having first and second opposing surfaces; and

a fastener assembly for releasably securing the stop head in a selected location on a

5 tongue area of the footwear article, wherein the stop head includes an offset attachment point for the fastener assembly and is rotatable about the attachment point such that either the first surface or the second surface may be chosen to contact a first closure edge of the footwear article.

17. The apparatus of claim 16 further comprising a second stop device comprising a second

10 stop head having first and second opposing surfaces, and a second fastener for releasably securing the stop head in a selected location that is adjacent to and opposite a first stop device, wherein the second stop head includes an offset attachment point for the fastener assembly and is rotatable about the attachment point such that either the first surface or the second surface of the second stop head may be chosen to contact a second closure edge of the footwear article.

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18. The apparatus of claim 16 wherein the first and second opposing surfaces of the stop head are shaped to complement the shape of a cable guide member that is associated with the closure edge of the footwear article.

20 19. A stop device for use with a footwear lacing system to prevent opposing closure edges of a footwear article from advancing towards each other comprising:

a housing that includes at least one lace channel for permitting a lace to freely pass therethrough;

at least one adjustable stop bumper located on at least a first distal end of the housing, the stop bumper including a lace channel therethrough and a contact edge for contacting a closure edge of the footwear article; and

at least one tightening mechanism connected to the housing and associated with the stop bumper, for adjusting the length between an edge of the distal end of the housing and the contact edge.

20. The stop device of claim 19 wherein the tightening mechanism comprises a twist tightening mechanism and a threaded tube.

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21. The stop device of claim 19 wherein the housing is cross-shaped and further comprises two crossing lace channels and at least two adjustable stop bumpers, the stop bumpers configured to contact first and a second opposing closure edges of the footwear article.

15 22. The stop device of claim 21 further comprising a tightening mechanism associated with each of the stop bumpers.

23. The stop device of claim 21 further comprising four adjustable stop bumpers, the stop bumpers configured to contact first and a second opposing closure edges of the footwear article.

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24. A footwear lacing system for an article of footwear that includes a tongue area having first and second opposing side edges comprising:

a plurality of lace guide members affixed to the first and second side edges and positioned in opposing relationship to each other for guiding the lace to traverse the tongue area; at least one lace guided by the guide members to traverse the tongue area; and at least one adjustable stop device configured to contact a lace guide when the lace is tensioned for preventing the first side edge from approaching the second side edge when the lace is tensioned.

25. The lacing system of claim 24 further comprising a tightening mechanism connected to the footwear article, wherein the lace is rotationally connected to the tightening mechanism.

26. The lacing system of claim 24 wherein the stop device comprises a stop guide and at least one adjustable stop element, the at least one stop element having a stop head and a releasable affixing member, wherein the stop head is configured to be manipulated by a user to releasably secure the affixing member to a selected position across the length of the stop guide and wherein the stop head is operable to contact a lace guide member.

27. The lacing system of claim 26 wherein a first distal end of the stop guide is configured for attachment to a tongue of the footwear article.

28. The lacing system of claim 27 further comprising a cross guide member configured for attachment to the tongue, the cross guide member comprising a base section with a sleeve to accommodate a free-floating, second distal end of the stop guide, and a guide portion including at least one channel for guiding the lace.

29. The lacing system of claim 26 wherein the stop guide includes a plurality of openings, and the affixing member includes at least one stop pin for releaseably mating with a selected opening.

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30. The lacing system of claim 26 wherein the stop head has a front surface that is shaped to correspond to the shape of a cable guide member.

31. The lacing system of claim 26 wherein the stop element further comprises a stop tab.

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32. The lacing system of claim 26 further comprising a second stop device comprising a second stop guide and a second stop element having a second stop head and a second releasable affixing member, wherein the second stop device is fastened to a portion of the footwear article that is adjacent to the original stop device such that the second stop head is operable to contact an
15 opposing lace guide member.

33. The lacing system of claim 26 wherein the stop guide includes a plurality of teeth.

34. The lacing system of claim 33 which further comprises a second stop element having an
20 affixing member that includes at least one tooth for releasably meshing with the teeth of the stop guide, and wherein a first stop element and the second stop element include first and second stop heads configured to contact first and second opposing lace guides.

35. The lacing system of claim 24 wherein the stop device comprises a stop head having a contact surface for contacting a lace guide member, a tab connected to the stop head, wherein the tab includes a plurality of adjustment holes for attachment to a tongue area of the footwear article, and further comprising a fastener for releasably securing the tab in a selected position on
5 the tongue area.

36. The lacing system of claim 24 wherein the stop device comprises a stop head having first and second opposing surfaces, and a fastener assembly for releasably securing the stop head in a selected location on a tongue area of the footwear article, wherein the stop head includes an
10 offset attachment point for the fastener assembly and is rotatable about the attachment point such that either the first surface or the second surface may be chosen to contact a lace guide member.

37. A footwear lacing system for an article of footwear that includes a tongue area and first and second opposing closure edges comprising:

15 at least one lace;

a lace guiding system having a plurality of lace guides affixed to the first and second closure edges for guiding the lace to traverse the tongue area in a plurality of locations to enable tightening of the footwear on the foot of a wearer; and

at least one lace end tightening device affixed to the footwear for accommodating an end
20 portion of the lace to provide for adjustments to the tension of the lace.

38. The lacing system of claim 37 further comprising a tightening mechanism affixed to the footwear and connected to the lace, the tightening mechanism operable by a user to tension the lace.

5 39. The lacing system of claim 37 wherein the lace end tightening device is a cable-end tightener that comprises an end section affixed to the footwear, and a twist tightening mechanism associated with the end section.

10 40. The lacing system of claim 37 wherein the lace end tightening device is a cable length adjustment device affixed to the footwear, wherein the adjustment device includes a plurality of end stations each capable of releasable connection to the lace.

41. The lacing system of claim 40 wherein the cable length adjustment device includes a serpentine path for accommodating the lace.

15 42. A method for stabilizing at least one zone of a lace tensioning system of a footwear article comprising:

adjusting a stop system affixed to a tongue area of the footwear, wherein the stop system includes components capable of contacting first and second closure edges in at least a first zone
20 of the footwear article; and

tensioning the lace in the at least first zone such that the components of the stop system prevent the first and second closure edges from advancing towards each other.

43. The method of claim 42 which further comprises adjusting the stop system by manipulating at least one stop head that is releasably affixed to a stop guide.

44. The method of claim 42 which further comprises adjusting the stop system by
5 manipulating at least one stop device that includes a tab that is releasably affixed to a tongue area of the footwear article.

45. The method of claim 42 which further comprises adjusting the stop system by rotating a stop device that includes a stop head and an offset attachment point, wherein the stop device is
10 releasably affixed to a tongue area of the footwear article.

46. The method of claim 42 which further comprises adjusting the stop system by manipulating at least one stop hook that is releasably affixed to a toothed track.

15 47. The method of claim 42 which further comprises adjusting the stop system by manipulating at least one twist tightening mechanism of a cable lock-out device.

48. The method of claim 42 which further comprises adjusting a second stop system affixed to a tongue area, wherein the second stop system includes components capable of contacting first
20 and second closure edges in at least a second zone of the footwear article.

49. A method for stabilizing at least one zone of a lace tensioning system of a footwear article comprising:

adjusting a first adjustable stop device affixed to a tongue in a first zone, the first stop device including at least one stop element having a stop head and a releasable affixing member, wherein the stop head is configured to be manipulated by a user to be positioned at a selected location on the tongue, and wherein the stop head is operable to contact a first closure edge of the footwear article;

adjusting a second adjustable stop device affixed to the tongue in the first zone, the second stop device including at least one second stop element having a second stop head and a second releasable affixing member, wherein the second stop head is configured to be manipulated by a user to be positioned at a selected location on the tongue, and wherein the second stop head is operable to contact a second closure edge of the footwear article; and

tensioning the lace in the first zone such that the first and second stop devices contact the first and second closure edges and prevent them from approaching each other in the first zone.

50. The method of claim 49 further comprising adjusting third and fourth adjustable stop devices in a second zone, and tensioning the lace in the second zone such that the third and fourth stop devices contact the first and second closure edges and prevent them from approaching each other in the second zone.